

Serial No. 10/750,626; Navy Case No. 84930

Amendments to the Claims:

Please use the following listing of claims to replace all prior versions, and listings, of the claims in the above-identified application.

Listing of Claims:

1 Claim 1 (Currently Amended)

2 A corner-cube reflector having three reflective surfaces comprising:

3 at least one of said reflective surfaces being a surface of a bimaterial cantilever that
4 changes between a substantially planar shape and a curved shape upon exposure to an agent of
5 interest wherein an agent sensitive coating is disposed on a surface of said bimaterial cantilever,
6 said agent sensitive coating being substantially transparent to electromagnetic radiation.

1 Claim 2 (Original)

2 The apparatus of claim 1 wherein said bimaterial cantilever is chosen from the bimaterial
3 group of Au-Si, Pd-Si, Au-Si₃N₄, and Pd-Si₃N₄.

1 Claim 3 (Canceled)

2 The apparatus of claim 1 wherein an agent sensitive coating is disposed on a surface of
3 said bimaterial cantilever, said agent sensitive coating being substantially transparent to said
4 electromagnetic radiation.

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1 Claim 4 (Canceled)

2 The apparatus of claim 1 wherein an agent sensitive coating is disposed on a surface of
3 said bimaterial cantilever, said agent sensitive coating being substantially reflective of said
4 electromagnetic radiation.

1 Claim 5 (Withdrawn)

2 An apparatus comprising:

3 a reflector having three reflective surfaces that are mutually orthogonal when said
4 reflector is in a first condition, wherein at least one of said reflective surfaces is a surface of a
5 bimaterial cantilever that goes from a substantially planar shape when said reflector is in said
6 first condition to a curved shape when said reflector is in a second condition;

7 a source of electromagnetic radiation for projecting said electromagnetic radiation to said
8 reflector; and

9 a detector disposed to receive electromagnetic radiation as reflected from said reflector.

1 Claim 6 (Withdrawn)

2 The apparatus of claim 5 wherein said bimaterial cantilever is chosen from the bimaterial
3 group of Au-Si, Pd-Si, Au-Si₃N₄, and Pd-Si₃N₄.

1 Claim 7 (Withdrawn)

2 The apparatus of claim 5 wherein an agent sensitive coating is disposed on a surface of

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3 said bimaterial cantilever, said agent sensitive coating being substantially transparent to said
4 electromagnetic radiation.

1 **Claim 8 (Withdrawn)**

2 The apparatus of claim 5 wherein an agent sensitive coating is disposed on a surface of
3 said bimaterial cantilever, said agent sensitive coating being substantially reflective of said
4 electromagnetic radiation.

1 **Claim 9 (Withdrawn)**

2 The apparatus of claim 5 wherein said detector detects the intensity of electromagnetic
3 radiation as received at said detector.

1 **Claim 10 (Withdrawn)**

2 The apparatus of claim 5 wherein said detector detects the phase of electromagnetic
3 radiation as received at said detector.

1 **Claim 11 (Withdrawn)**

2 The apparatus of claim 5 wherein said detector detects the angle of said electromagnetic
3 radiation as received at said detector.

1 **Claim 12 (Withdrawn)**

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2 A sensor comprising:

3 a corner cube reflector having three reflective surfaces that are mutually orthogonal in a
4 first sensing condition, wherein at least one of said reflective surfaces is a surface of a bimaterial
5 cantilever that goes from a substantially planar shape when said corner cube reflector is in said
6 first sensing condition to a curved shape when said corner cube reflector is in a second sensing
7 condition;

8 a source of electromagnetic radiation for projecting said electromagnetic radiation to said
9 corner cube reflector; and

10 a detector disposed to receive electromagnetic radiation as reflected from said corner-
11 cube reflector, said received electromagnetic radiation having of a first state corresponding to
12 said first sensing condition of said corner cube reflector and having of a second state different
13 from said first state and corresponding to said second sensing condition of said corner cube.

1 Claim 13 (Withdrawn)

2 The apparatus of claim 12 wherein said bimaterial cantilever is chosen from the
3 bimaterial group of Au-Si, Pd-Si, Au-Si₃N₄, and Pd-Si₃N₄.

1 Claim 14 (Withdrawn)

2 The apparatus of claim 12 wherein an agent sensitive coating is disposed on a surface of
3 said bimaterial cantilever, said agent sensitive coating being substantially transparent to said
4 electromagnetic radiation.

1 Claim 15 (Withdrawn)

2 The apparatus of claim 12 wherein an agent sensitive coating is disposed on a surface of
3 said bimaterial cantilever, said agent sensitive coating being substantially reflective of said
4 electromagnetic radiation.

1 Claim 16 (Withdrawn)

2 A sensing method comprising the steps of:

3 providing a corner cube reflector having three reflective surfaces that are mutually
4 orthogonal in a first sensing condition, wherein at least one of said reflective surfaces is a surface
5 of a bimaterial cantilever that goes from a substantially planar shape when said corner cube
6 reflector is in said first sensing condition to a curved shape when said corner cube reflector is in a
7 second sensing condition;

8 providing a source of electromagnetic radiation for projecting electromagnetic radiation
9 to said corner-cube reflector; and

10 providing a detector disposed to receive electromagnetic radiation as reflected from said
11 corner-cube reflector, wherein said received electromagnetic radiation has a first state
12 corresponding to said first sensing condition of said corner cube reflector and has a second state
13 different from said first state and corresponding to said second sensing condition of said corner
14 cube.

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1 Claim 17 (Withdrawn)

2 The method of claim 16 further comprising the step of coating a surface of said bimaterial
3 cantilever with an agent sensitive coating that is substantially transparent to said electromagnetic
4 radiation.

1 Claim 18 (Withdrawn)

2 The apparatus of claim 16 wherein an agent sensitive coating is disposed on a surface of
3 said bimaterial cantilever, said agent sensitive coating being substantially reflective of said
4 electromagnetic radiation.

1 Claim 19 (New)

2 The apparatus of claim 1 wherein said agent sensitive coating selectively bonds to a
3 chemical or biological species and wherein said bimaterial cantilever changes between said
4 substantially planar shape and said curved shape upon said agent sensitive coating being exposed
5 to said chemical or biological species.

Claim 20 (New)

1 A corner-cube reflector having three reflective surfaces comprising:

2 at least one of said reflective surfaces being a surface of a bimaterial cantilever; and
3 an agent sensitive coating disposed on said surface of said bimaterial cantilever to
4 selectively bond to an agent of interest, wherein said bimaterial cantilever changes between a

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5 substantially planar shape and a curved shape upon exposure to said agent of interest.

1 Claim 21 (New)

2 The apparatus of claim 20 wherein said agent of interest is a chemical or biological
3 species.

1 Claim 22 (New)

2 The apparatus of claim 21 wherein said agent sensitive coating is substantially transparent
3 to electromagnetic radiation.

1 Claim 23 (New)

2 The apparatus of claim 21 wherein said agent sensitive coating is substantially reflective
3 to electromagnetic radiation.

1 Claim 24 (New)

2 The apparatus of claim 22 wherein said bimaterial cantilever is chosen from the
3 bimaterial group of Au-Si, Pd-Si, Au-Si₃N₄, and Pd-Si₃N₄.

1 Claim 25 (New)

2 The apparatus of claim 23 wherein said bimaterial cantilever is chosen from the
3 bimaterial group of Au-Si, Pd-Si, Au-Si₃N₄, and Pd-Si₃N₄.